



KRISHNA BHAGYA JALA NIGAM LIMITED

(A Government of Karnataka Undertaking)
PWD Annexe Building, K.R. Circle, Bangalore 560 001.

DETAILED ESTIMATE FOR

SURVEY, INVESTIGATION, DESIGN, SUPPLY, ERRECTION, TESTING AND COMMISIONING OF LIFT IRRIGATION SYSTEM FOR "CONSTRUCTION OF CIVIL AND ELECTRO-MECHANICAL WORKS FOR AUGMENTATION OF FILLING UP OF 35 TANKS IN YADGIR TALUKA, OF YADGIR DISTRICT BY LIFTING WATER FROM BHIMA RIVER " ON TURN KEY BASIS CONSISTING OF THE FOLLOWING COMPONENTS: CONSTRUCTION OF INTAKE CANAL, JACKWELL CUM PUMP HOUSE, DELIVERY CHAMBER, VERTICAL TURBINE PUMPS COUPLED TO HT MOTOR ELECTRICAL PANEL, SOFT STARTER, CAPACITOR, 110 KV POWER TRASFORMERS, 110/6.6 KV SUB-STATION, 110 KV POWER LINE AND 110 KV TERMINAL BAY, M.S. RISING MAINS, PRESSURE / GRAVITY DISTRIBUTION NETWORK FOR FILLING UP OF 35 TANKS THROUGH MS/DI PIPES, SUPPLY OF SPARES PARTS AND TOOLS INCLUDING REQUISITE MAN POWER FOR O & M OF THE SYSTEM COVERED UNDER THE SCOPE FOR FIVE YEARS FROM THE DATE OF COMPLETION FOR YADGIR TANK FILLING SCHEME ON TURNKEY BASIS



REPORT – VOLUME – I

Estimated Cost Rs. 440.00 Crores (At 2017-18 Price Level)

December 2017

Consultant



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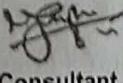
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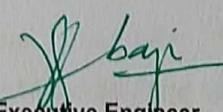
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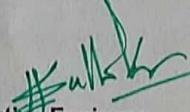
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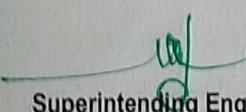
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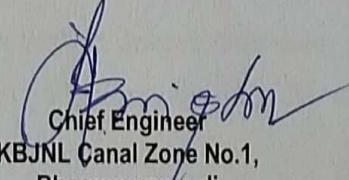
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Name of Division	KBJNL, SLI Division, Khanapur Camp
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Major Head	
Minor Head	
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Estimate Prepared in the Office of the Executive Engineer, KBJNL, SLI Division, Khanapur Camp of the probable expenses that will be incurred.	
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Technical Sanctioned under No.	
Administratively approved vide No.	WRD/135/KBN/2017, Bangalore Dated: 08-11 - 2017.
Estimated prepared by	M/s E I Technologies Pvt Ltd, Bangalore.
Estimate checked by (Call or Authority)	


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REPORT ON FILLING UP OF 35 TANKS OF YADGIR TALUKA OF YADGIR DISTRICT FROM BHIMA RIVER

1. Preamble

The drought prone area of Gulbarga District & Yadgir Districts, have been given special status of most backward area under Article 371(J) of the Constitution of India by GOI. This will improve the Socio economic status through agriculture and agriculture dependent activities, fisheries production, communication, transportation facilities and infrastructure. Further, it will help to increase in green cover and bio diversity through afforestation and avenue plantation. It might also help to improve the ground water table and water quality in semi critical and critical zone of ground water.

In order to uplift the most backward area of Yadgir taluka, the Honorable Member of Parliament of Gulbarga Constituency Sri. Mallikarjun Khargeji requested to Honorable Chief Minister of Karnataka on the day of opening of District Administrative Building Dated: 04.02.2017 to take-up the project of filling up of tanks in Yadgir Taluka in 2017-18 budget. Accordingly, the Honorable Chief Minister of Karnataka announced the project of filling up of 35 tanks of Yadgir taluka of Yadgir district from Sonthi Scheme in his 2017-18 budgetary speech. Hence, the project has been planned as below.

2. Present Proposal

Due to scanty rainfall in the catchment area in the past years and also due to development activities in the upstream catchment these tanks are not receiving the desired quantum of water for filling these tanks. The villagers are mainly dependent on these MI/ZP tanks for drinking water and other purposes.

In view of above requirements it is proposed to take up the scheme for filling up of 35 tanks by lifting water from Bhima River near Yadgir, in Yadgir Taluka of Yadgir District.

Detailed project report has been submitted to government for administrative approval. The government has accord the administrative approval vide letter number WRD/135/KBN/2017, Bangalore Dated: 08-11 - 2017 for an amount of Rs. 440.00 Crores. Refer Appendix - I for details.

3. Objective of the Assignment

The objective of the present assignment is to prepare the detailed designs, estimates, drawings and Draft Tender Papers (DTP) for filling 35 number of tanks in Yadgir Taluk of Yadgir District.

4. Water Requirement

The total water requirement for filling the 35 tanks in Yadgir Taluk of Yadgir District by considering 50% of live capacity of tanks and 25% evaporation losses works out to be 942.78 MCF (0.943 TMC).

Refer Annexure – 2 for detailed water requirement calculations.

5. List of tanks proposed for filling

List of 35 no of MI/ZP tanks showing the tank capacity and FRL are as follows in the Table.

T

No.	Tank	Tank Number	Live capacity of Tanks in Meft	FRL of tank (m) (Above MSL)	Proposed average filling in Meft
List of Direct Filling Tanks					
1	Lingeri Tank	1	6.6	361.611	3.3
2	Haligeri Tank	2	5.7	388.918	5.7
3	Nagalapur Tank	3	7.92	408.412	7.92
4	Gopalapur Tank	4	9.9	426.563	4.66
5	Ramasamudram Tank	5	16.5	416.437	16.5
6	Paspal Tank	6	23.10	454.663	11.6
7	Jangamakeri Tank	7	12.71	510.717	12.71
8	Machalanacheruvu Tank	8	8.72	604.332	8.72
9	Kakalwar Tank-2	9	4.8	587.426	2.4
10	Kakalwar Tank-1	10	9.68	594.489	4.84
11	Itakal Tank-1	11	25.04	582.598	12.52
12	Buragapalli Tank	12	10	604.521	5
13	Tulmamadi Tank	13	4	593.513	2
14	Guramitkal Tank	14	19.07	607.487	9.54
15	Chandaraki Tank	15	28	599.363	28
16	Dharmapur Tank	16	46.08	472.378	23.04
17	Chintalapalli Tank	17	32	469.096	16
18	Anapur Tank	18	22.47	441.676	11.24
19	Nasalwayi Tank	19	9	398.762	4.5
20	Goranur Tank	20	16	389.717	8
21	Karanagi Tank	21	4	390.433	2
22	Jegram Tank	22	20	380.6	20

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	FRL of tank (m) (Above MSL)	Proposed average filling in Mcft
23	Yelasatti Tank	23	5.95	402.592	2.98
24	Thoranatippa Tank	24	78.1	397.181	78.1
25	Madhwar Kotakunta Tank	25	18.36	406.422	18.36
26	Kalabelagundi Goan Tank	26	3.48	406.763	1.74
27	Kilakera Rayan Tank	27	5.1	393.663	5.1
28	Nilahalli Tank	28	6.8	387.966	3.4
29	Kanekal Rekalkunta Tank	29	24.3	384.215	24.3
30	Sambra Tank	30	53	386.447	53
31	Gudalgunta Tank	31	5.68	392.316	2.84
32	Swarastrahalli Tank	32	16.74	373.943	16.74
33	Kadechur Eramma Tank	33	15.6	368.696	7.8
34	Duppalli Tank	34	75.95	365.028	37.98
35	Mothakapalli Tank	35	11.68	523.673	5.84
Total =			661.52 Mcft		478.36

List of Indirect Filling Tanks

36	Pogalapur Tank	2A	5.3	367.557	2.65
37	Nagalapur Tank-1	3A	2.84	390	1.42
38	Ashnal Tank	5A	14.75	403.277	7.38
39	Belgera Tank-01	7A	4.75	418.125	4.75
40	Belgera Tank-02	7B	16.5	399.565	8.25
41	Gajarkot Tank	8A	21.62	554.116	10.81
42	Keshwar Tank	15A	80.48	570.568	80.48
43	Nazarapur Tank	15B	25.7	469.219	25.7
44	Minasapur Tank	15C	16.4	440.023	8.2
45	Yidalur Tank	22A	4.04	380.019	2.02
46	Wadawat Tank	24A	8.28	380.123	8.28
47	Azalpur Tank	24B	15.4	372.137	7.7
48	Wanksambra Tank	25A	9	384.049	4.5
49	Killankeri Tank-1	27B	4.1	382.563	4.1
50	Killankera Tank-2	27A	4.1	388.812	2.05
51	Kanekal small Tank	29A	10	380.197	10
52	Rampur Abdulla Tank	29B	14.8	371.58	7.4
53	Baddepalli Thoor Tank	30A	3.6	376.273	3.6
54	Baddepalli Dubbal Kunta Tank	30B	13.4	376.421	6.7

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	FRL of tank (m) (Above MSL)	Proposed average filling in Mcft
55	Kadechur Soma Devi Tank	32A	6.2	368.138	3.1
Total =			281.26 Mcft		209.09
Grand Total =			942.78 Mcft		687.45
Add 25 % for Evaporation Losses					923.12 Mcft 0.923 TMC

Table 1: List of MI/ZP tanks

6. Survey and Investigation

6.1 Fixing Alignment of Pressure Distribution and Gravity Distribution, Survey, Preparation of Drawings

➤ Fixing Alignment and detailed survey

The detailed survey was commenced immediately after handing over of site.

6.2 Source

It is planned to lift water from Bhima River to supply the water for filling of MI/ZP Tanks and augmenting the storage of Tanks.

6.3 Take-off Point

Take -off point for Lifting of Water from Bhima River near existing Yadgir Barrage.

6.4 Objective

Carrying out detailed topographic survey of proposed pipeline alignment by establishing Total station control points.

The topographic survey consists of the following activities:

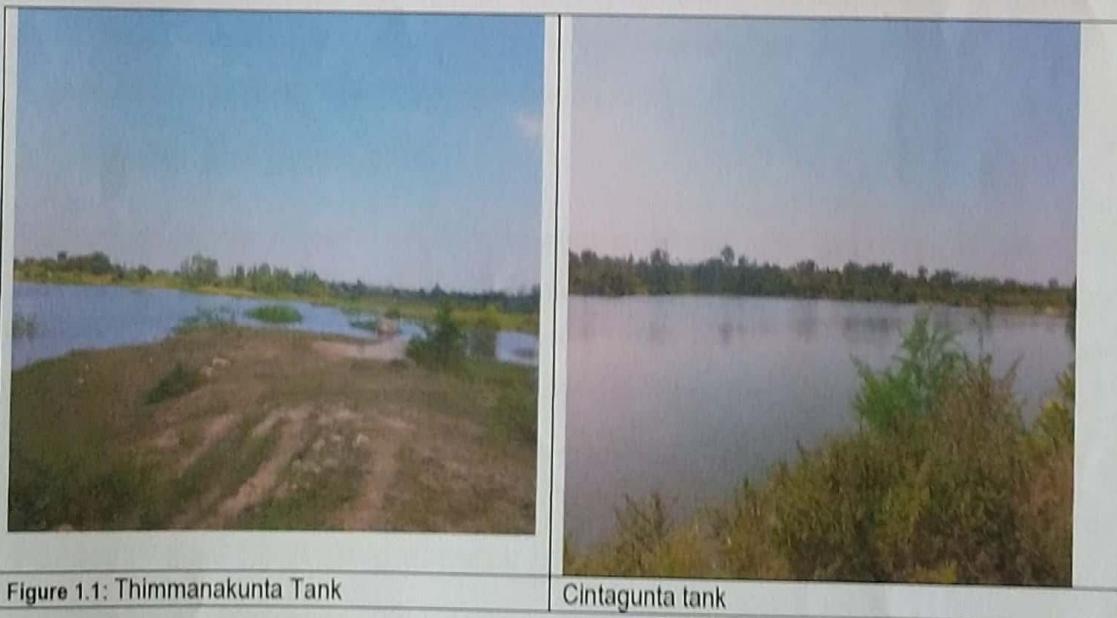
- Establishment of planimetric control points along the proposed pipeline/canal alignment at regular interval using Total Station equipment.
- Establishment of TBM along the proposed pipeline/canal alignment using Auto level with respect to GTS BM.

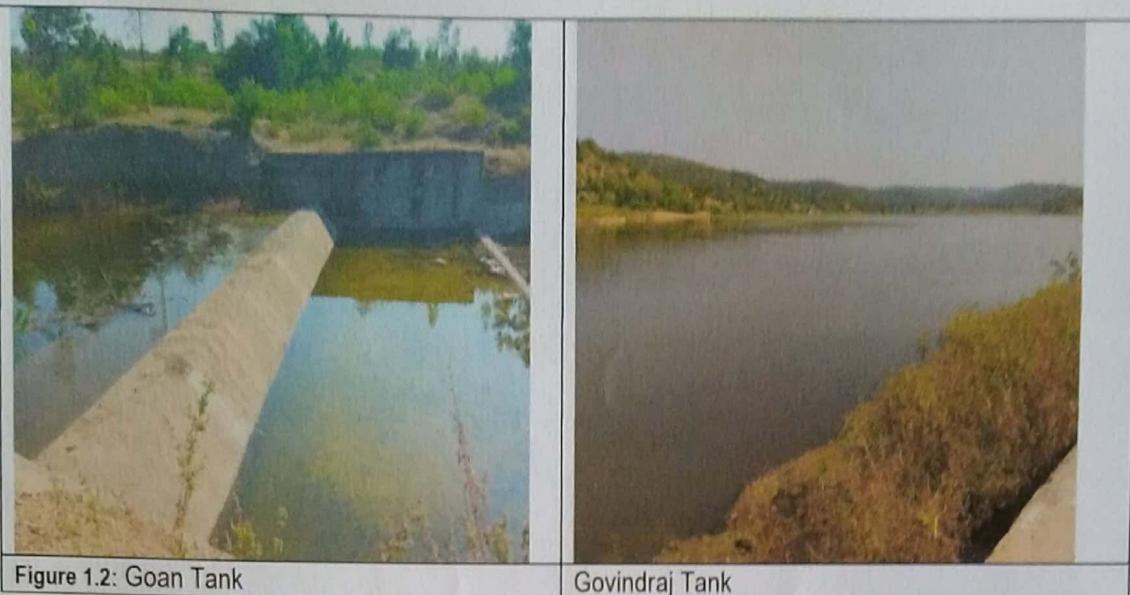
- Carryout detailed topographic survey of proposed pipeline alignment from take-off point to terminal point.
- Preparation of Key map of the project area showing the project site, administrative jurisdiction, road connectivity, etc. on a suitable scale.
- Preparation of List of Total Station traverse coordinates.
- Preparation of List of temporary bench marks.
- Preparation of Plan and L/S of proposed pipeline alignment.

6.5 Site Visit Photographs

The Consultant team of Engineers along with the department officials visited the proposed Head works location, alignment of the Pressure Distribution Network, Delivery Chamber, Gravity Distribution Network, existing Tanks, and Barrages. The details are as under:

Refer Annexure – 21 for the tank details.





7. The Proposal

As discussed earlier on study of toposheet the proposed tanks which are planned to be filled are on left flank of the Bhima River. The only nearest dependable source is Bhima River for filling these tanks. These tanks are spread on east i.e. left flank of the River. Planning of an independent lift scheme from Bhima River will be Techno-economically viable.

8. Method of Distribution

The study on toposheet the proposed 35 tanks which are planned to be filled are on left flank of the Bhima River which flows in North to South direction and closed to Yadgir barrage. These tanks are spread towards east i.e. left flank of the river. Planning of an independent lift scheme from Bhima River will be Techno-economically viable. Hence it is proposed to lift the water from Yadgir Barrage.

It is proposed to fill these tanks within a span of 5 months i.e. from July - November during which time, sufficient inflow is available in Bhima River. The total quantum of water requirement will be about 942.78 MCFT (0.943 TMC) for filling of 35 tanks.

9. Details of Scheme

10.1. Proposal of filling of tanks under Stage - 01

Lifting of water from Yadgir Barrage to Gunjanur Delivery Chamber -1

The water will be lifted from Bhima River at Yadgir Barrage by constructing a Jack well cum pump house near Yadgir barrage and delivering at Gunjanur through Pressure Distribution of 49.60 km (approx.) length. From the Delivery Chamber-1 at Gunjanur village, Gravity Distribution System is proposed to feed water for filling some tanks through gravity and further feed water to stage - 02 lifting.

Table 2: The list of tanks proposed for filling under pressure in stage - 01 are as under:

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	Proposed average filling in Mcft	Add 25 % for Evaporation and Percolation Losses in Mcft	Discharge required for filling tanks in 150 days @ 18 Hours (Cumecs)
Tanks under Pressure Distribution of Stage 01						
1	Lingeri Tank	1	6.60	3.30	4.950	0.0144
2	Haligeri Tank	2	5.70	5.70	7.125	0.0208
3	Gopalapur Tank	4	9.30	4.65	6.975	0.0203
4	Ramasamudram Tank	5	16.50	16.50	20.625	0.0601
5	Pogalapur Tank	2A	5.30	2.65	3.975	0.0116
6	Ashnal Tank	5A	14.75	7.38	11.063	0.0322
Total = 58.15 Mcft			40.18 Mcft	54.71 Mcft	0.1594 cumecs	
			0.040 TMC	0.055 TMC		

The RL of Delivery Chamber - 01 at Gunjanur village is 452.00 m and the RL of all the tanks which are to be filled from this delivery chamber-1 are below this level. The first tank Anapur is at RL 441.676 m and the bottom most tank Dupalli is at RL 365.028 m. The total length of gravity distribution pipe network from Delivery Chamber-1 to the bottom most tank works out to be approximately 96.85 Km.

Table 3: The list of tanks proposed for filling under Gravity in stage - 01 are as under:

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	Proposed average filling in Mcft	Add 25 % for Evaporation and Percolation Losses in Mcft	Discharge required for filling tanks in 150 days @ 18 Hours (Cumecs)
1	Nagalapur Tank	3	7.92	7.92	9.900	0.0288
2	Anapur Tank	18	22.47	11.24	16.853	0.0491
3	Nasalwayi Tank	19	9.00	4.50	6.750	0.0197
4	Goranur Tank	20	16.00	8.00	12.000	0.0350
5	Karanagi Tank	21	4.00	2.00	3.000	0.0087
6	Jegram Tank	22	20.00	20.00	25.000	0.0728
7	Yelasatti Tank	23	5.95	2.98	4.463	0.0130
8	Thoranatippa Tank	24	78.10	78.10	97.625	0.2844

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	Proposed average filling in Mcft	Add 25 % for Evaporation and Percolation Losses in Mcft	Discharge required for filling tanks in 150 days @ 18 Hours (Cumeecs)
9	Madhwar Kotakunta Tank	25	18.36	18.36	22.950	0.0669
10	Kalabelagundi Goan Tank	26	3.48	1.74	2.610	0.0076
11	Kilakera Rayan Tank	27	5.10	5.10	6.375	0.0186
12	Nilahalli Tank	28	6.80	3.40	5.100	0.0149
13	Kanekal Rekalkunta Tank	29	24.30	24.30	30.375	0.0885
14	Sambra Tank	30	53.00	53.00	66.250	0.1930
15	Gudalgunta Tank	31	5.68	2.84	4.260	0.0124
16	Swarastrahalli Tank	32	16.74	16.74	20.925	0.0610
17	Kadechur Eramma Tank	33	15.60	7.80	11.700	0.0341
18	Duppalli Tank	34	75.95	37.98	56.963	0.1659
19	Nagalapur Tank-1	3A	2.84	1.42	2.130	0.0062
20	Yidalur Tank	22A	4.04	2.02	3.030	0.0088
21	Wadawat Tank	24A	8.28	8.28	10.350	0.0302
22	Azalpur Tank	24B	15.40	7.70	11.550	0.0336
23	Wanksambra Tank	25A	9.00	4.50	6.750	0.0197
24	Killankeri Tank-1	27B	4.10	4.10	5.125	0.0149
25	Killankera Tank-2	27A	4.10	4.10	3.075	0.0090
26	Kanekal small Tank	29A	10.00	10.00	12.500	0.0364
27	Rampur Abdulla Tank	29B	14.80	7.40	11.100	0.0323
28	Baddepalli Thoor Tank	30A	3.60	3.60	4.500	0.0131
29	Baddepalli Dubbal Kunta Tank	30B	13.40	6.70	10.050	0.0293
30	Kadechur Soma Devi Tank	32A	6.20	3.10	4.650	0.0135
Total = 484.21 Mcft			368.91 Mcft	487.91 Mcft	1.421 cumecs	

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	Proposed average filling in Mcft	Add 25 % for Evaporation and Percolation Losses in Mcft	Discharge required for filling tanks in 150 days @ 18 Hours (Cumecs)
				0.369 TMC	0.488 TMC	

10.2. Proposal of filling of tanks under Stage - 02

Gunjanur Delivery Chamber-1 to Gurumitkal Delivery Chamber -2

The water will be lifted from Gunjanur Delivery Chamber-1 by constructing a jack well cum pump house - 02 and delivering to Gurumitkal Delivery Chamber - 02 through Pressure Distribution Network System for a length of 54.34 km. The Delivery Chamber - 02 at Gurumitkal will feed water for filling up of balance No. of tanks through gravity. Please refer Schematic diagram enclosed.

Table 4: The list of tanks proposed for filling under Pressure in stage - 02 are as under:

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	Proposed average filling in Mcft	Add 25 % for Evaporation and Percolation Losses in Mcft	Discharge required for filling tanks in 150 days @ 18 Hours (Cumecs)
1	Paspal Tank	6	23.19	11.60	17.393	0.0507
2	Jangamakeri Tank	7	12.71	12.71	15.888	0.0463
3	Machalanacheruvu Tank	8	8.72	8.72	10.900	0.0318
4	Kakalwar Tank-2	9	4.80	2.40	3.600	0.0105
5	Kakalwar Tank-1	10	9.68	4.84	7.260	0.0212
6	Dharmapur Tank	16	46.08	23.04	34.560	0.1007
7	Chintalapalli Tank	17	32.00	16.00	24.000	0.0699
8	Belgera Tank-01	7A	4.75	4.75	5.938	0.0173
9	Belgera Tank-02	7B	16.50	8.25	12.375	0.0361
10	Gajarkot Tank	8A	21.62	10.81	16.215	0.0472
Total = 180.05 Mcft				103.12 Mcft	148.13 Mcft	0.432 cumecs
				0.10 TMC	0.148 TMC	

The RL of Delivery chamber - 02 at Gurumitkal is 643.00 m and the RL of all the tanks which are to be filled from this delivery chamber - 02 are below this level. The first tank Itakal Tank - 01 is at

RL 582.598 m and the bottom most tank Minasapur is at RL 440.023 m. The total length of gravity distribution pipe network of stage – 02 works out to be approximately 26.74 Km.

Table 5: The list of tanks proposed for filling under Gravity in stage - 02 are as under:

No.	Tank	Tank Number	Live capacity of Tanks in Mcft	Proposed average filling in Mcft	Add 25 % for Evaporation and Percolation Losses in Mcft	Discharge required for filling tanks in 150 days @ 18 Hours (Cumecs)
1	Tulmamadi Tank	13	4.00	2.00	3.000	0.0087
2	Mothakapalli Tank	35	11.68	5.84	8.760	0.0255
3	Itakal Tank-1	11	25.04	12.52	18.780	0.0547
4	Buragapalli Tank	12	10.00	5.00	7.500	0.0218
5	Guramitkal Tank	14	19.07	9.54	14.303	0.0417
6	Chandaraki Tank	15	28.00	28.00	35.000	0.1020
7	Keshwar Tank	15A	80.48	80.48	100.600	0.2931
8	Nazarapur Tank	15B	25.70	25.70	32.125	0.0936
9	Minasapur Tank	15C	16.40	8.20	12.300	0.0358
Total = 220.37 Mcft				177.28 Mcft	232.37 Mcft	0.677 cumecs
				0.18 TMC	0.232 TMC	

10. Details of lift scheme for Yadgir Tank Filling Scheme

The lift scheme comprises of following components:

Stage - 01: Lifting Water from Yadgir Barrage to Gunjanur DC - 01

- Construction of Intake Canal for a length of 200.0 m (Including fore bay).
- Jack well cum pump house to accommodate 4 No's of Vertical Turbine Pumps (3 Working + 1 Standby) for Lifting water from Bhima river.
- Supply, Installation, testing and commissioning of pumping machinery and pump house electrical works.
- Erection of 110 KV/ 6 KV electrical power lines and terminal bay from existing substation to supply power to the Jack well cum pump house and construction of electrical substation.
- Supply, jointing, laying, testing and commissioning of MS Pressure Distribution Network for conveying water from pump house to delivery chamber - 01.

- Construction of Delivery chamber - 01 at the end of Pressure Distribution at Gunjanur.
- Gravity Distribution System for feeding the tanks.

Stage - 02: Lifting Water from Gunjanur DC - 01 to Gurmitkal DC – 02

- Construction of Forebay for a length of 20.0 m.
- Jack well cum pump house with 3 No's of Vertical turbine pumps (2 Working + 1 Standby) for lifting water from Delivery Chamber - 01 at Gunjanur to Delivery Chamber - 02 at Gurmitkal.
- Supply, Installation, testing and commissioning of pumping machinery and pump house electrical works.
- Erection of 110 KV/ 6 KV electrical power lines and terminal bay from existing substation to supply power to the Jack well cum pump house and construction of electrical substation.
- Supply, jointing, laying, testing and commissioning of MS/DI Pressure Distribution Network for conveying water from pump house to delivery chamber – 02.
- Construction of Delivery chamber - 02 at the end of Pressure Distribution at Gurmitkal.
- Gravity Distribution System for feeding the tanks.

11.1. Designs for Lifting Water from Yadgir Barrage to Gunjanur DC - 01

11.1.1. Intake Canal and Forebay

Total length of Intake Canal works out to 200.0 m with Approach to draw the water from the Bhima River near Yadgir Barrage to the jack well cum pump house - 01. The details of the intake Canal are as under:

Table 1.1: Details of proposed Intake Canal

No	Particulars	Details
		Lifting Water from Yadgir Barrage to Gunjanur DC - 01
1	Required discharge	2.70 cumecs + 100 % Extra = 5.40 cumecs
2	Designed discharge	5.456 cumecs
3	Bed gradient	1 in 3000
4	Bed Width	2.0 m
5	Full Supply Depth	1.45 m
6	Free Board	0.60 m
7	Length	200.0 m

11.1.2. Jack Well cum Pump House - 01

Rectangular RCC framed structure is proposed at end of intake Canal for accommodating Vertical Turbine pumps for Lifting water from Bhima River Provision of accommodating HT board panels, starters, EOT crane, Watchmen Quarters, Office Room and Store Room etc., are made in the jack well. Details of the Jack well cum pump house are as under:

Table 2.1: Details of proposed jack well - 01

No.	Particulars	Details
		Lifting Water from Yadgir Barrage to Gunjanur DC - 01
1.	Type of structure	RCC framed structure
2.	Minimum water level / Intake level	355.000 m
3.	Ground level	361.700 m
4.	Sump bottom level	352.000 m
5.	Delivery floor level/ Pump floor level	367.500 m
6.	Switch gear and control room level	375.500 m
7.	Gantry level	378.000 m
8.	Roof level	381.000 m
9.	Overall size of the pump house	20.70 m x 20.50 m
10.	Unloading / Service bay	5.0 m x 8.5 m

11.1.3. Pumps and Motor

Vertical Turbine Pumps for lifting are recommended for this project. These pumps provide trouble free service for long time.

Pumps are proposed to be designed for peak discharge and standby pump is provided for ease of maintenance.

Peak discharge of 2.70 Cumecs is proposed to be considered for design of pumps, motors and rising main pipes.

Peak Discharge = 2.70 Cumecs.

Considering 4 No's (3 working +1 standby) of pumps for peak discharge.

Discharge per pump = $2.70 / 3 = 0.900$ Cumecs.

Discharge for working pumps = $0.900 \times 3 = 2.700$ Cumecs which is more than or equal to peak discharge.

Hence it is proposed to provide 4 no's of VT pumps with discharge capacity 2.70 Cumecs (3 working + 1 stand by)

Table 3.1: Details of Pumping Machinery

No	Particulars	Details
		Lifting Water from Yadgir Barrage to Gunjanur DC - 01
1.	Type of Pump	Vertical Turbine Pumps
2.	Efficiency of Pump	90 %
3.	Intake Level	355.000 m
4.	Delivery Level	452.000 m
5.	Static Head	97.00 m
6.	Losses (Friction + pump internal+ other)	73.00 m
7.	Total Pump Head	170.00 m
8.	Peak Discharge	2.70 Cumecs
9.	Number of Pumps	3 working + 1 Standby
10.	Discharge for each Pump	0.900 Cumecs, 3240.00 m ³ / hr
11.	Capacity of each Pump	2588 HP (1930.648 KW)
12.	Total Installed Capacity	10352 HP (7722.592 KW)
13.	Total Power Requirement	13.50 MVA
14.	Electrical Sub-station	110 KV/6.6 KV outdoor type with 2 No. of 13.50 MVA Power transformer (1 Working + 1 Standby) for Lifting water from Bhima River
15.	Delivery pipe	700 mm diameter 10 mm thick MS pipes
16.	Manifold system	1700 mm diameter 19 mm thick MS pipes

11.1.4. Power Requirement and electrical substation:

The total power requirement is 13.50 MVA. The power requirement is calculated taking into account of no. of working pumps and auxiliary power supply. The voltage level at which power is required is 6.6 KV and required transformer capacity is to receive 110/6.6 KV power stepping down to 6.6 KV for

feeding HT motors. It is proposed to provide transformer capacity of 13.50 MVA power for catering the above loads with OLTC & RTCC panels. Provision for 2 No. of transformer (1 working + 1 standby) of capacity 13.50 MVA in the existing electrical substation. The power supply is considered from existing Yadgir Substation Power Line.

It is proposed to construct a 110 KV Terminal bay at existing Yadgir substation and to draw the power from this existing 110 KV substation through 110 KV / 6.6 KV SC line on DC Towers. This substation is the nearest substation that required power can be drawn from this substation. The length of power line works out to be 8.00 Km from this substation to proposed lifting point.

11.1.5. Design of Pressure Distribution Network System for filling Tanks

From the jack well cum pump house - 01 pressure distribution is proposed to feed the MI/ZP tanks. Design guidelines as per CPHEEO manual and other relevant IS codes are considered for the design of the pressure distribution system. The details of the pressure distribution network system are as under.

Table 5.1: Details of Pressure Distribution Network System.

No.	Material	Length in m	Pipe Diameter in m	Thickness in mm	Pipe Class / Pressure Rating
1.	MS	33900	1350.00	11.30	MS Pipe
2.	MS	1200	250.00	4.00	MS Pipe
3.	MS	5600	160.00	4.00	MS Pipe
4.	MS	8900	140.00	4.00	MS Pipe
Total Length		49600			

11.1.6. Delivery Chamber - 01

Rectangular RCC Delivery chamber - 01 is proposed at end of Pressure Distribution Network. The design of delivery chamber - 01 is designed for retention period of 90.00 seconds. The details of the proposed Delivery chamber are as under:

Table 6.1: Details of Delivery Chamber - 01

No	Particulars	Details
		Lifting Water from Yadgir Barrage to Gunjanur DC - 01
1.	Ground level at Delivery chamber - 01	RL 451.500 m

No	Particulars	Details
		Lifting Water from Yadgir Barrage to Gunjanur DC - 01
2.	Capacity of sump with 1.50 minutes retention period	277.70 Cum
3.	Depth of water	1.70 m
4.	Size	12.0 m x 12.0 m
5.	Water cushion	0.50 m
6.	Free Board	0.80 m
7.	Overall all depth	3.0 m
8.	Delivery level	RL 452.000 m

11.1.7. Design of Gravity Distribution Network for Filling of MI Tanks

From the Delivery Chamber - 01 and network of gravity distribution is proposed to feed the MI/ZP Tanks. Design guidelines as per CPHEEO manual and other relevant IS codes are considered for the design of the gravity distribution system. The details of the gravity distribution network system are as under.

Table 7.1: Details of Gravity Distribution Network

No.	Material	Length in m	Pipe Diameter in m	Pipe Class / Pressure Rating
1.	MS	3000	1600.00	Required Thickness
2.	MS	11900	1500.00	Required Thickness
3.	MS	4000	1250	Required Thickness
4.	MS	600	960	Required Thickness
5.	MS	4200	860	Required Thickness
6.	MS	1500	800	Required Thickness
7.	MS	15600	680	Required Thickness
8.	MS	2600	610	Required Thickness
9.	MS	4500	560	Required Thickness
10.	DI Pipe	5100	450	Class K-7
11.	DI Pipe	12600	400	Class K-7

No.	Material	Length in m	Pipe Diameter in m	Pipe Class / Pressure Rating
12.	DI Pipe	7650	355	Class K-7
13.	DI Pipe	3800	315	Class K-7
14.	DI Pipe	1500	280	Class K-7
15.	DI Pipe	9400	250	Class K-7
16.	DI Pipe	8500	200	Class K-7
17.	DI Pipe	400	140	Class K-7
Total Length		96850		

Considering the above design parameters, gravity pipe distribution network has been designed. It is proposed to provide a network of MS/DI pipelines taking the topography of the site into account.

11.2. Designs for Lifting Water from Gunjanur DC - 01 to Gurmitkal DC – 02

11.2.1. Jack Well cum Pump House - 02

Rectangular RCC framed structure is proposed at DC – 1, with Forebay for accommodating Vertical Turbine pumps for Lifting water from Gunjanur DC - 01 to Gurmitkal DC – 02. Provision of accommodating HT board panels, starters, EOT crane, Watchmen Quarters and Store Room etc., are made in the jack well. Details of the Jack well cum pump house are as under:

Table 1.1: Details of proposed jack well - 02

No.	Particulars	Details
		Lifting Water from Gunjanur DC - 01 to Gurmitkal DC – 02
1.	Type of structure	RCC framed structure
2.	Minimum water level / Intake level	451.000 m
3.	Ground level	451.500 m
4.	Sump bottom level	449.000 m
5.	Delivery floor level/ Pump floor level	454.000 m
6.	Switch gear and control room level	462.000 m
7.	Gantry level	464.400 m
8.	Roof level	467.500 m

No.	Particulars	Details
		Lifting Water from Gunjanur DC - 01 to Gurmitkal DC - 02
9.	Overall size of the pump house	15.30 m x 20.50 m
10.	Unloading / Service bay	5.0 m x 8.5 m

11.2.2. Pumps and Motor

Vertical Turbine Pumps for lifting are recommended for this project. These pumps provide trouble free service for long time.

Pumps are proposed to be designed for peak discharge and standby pump is provided for ease of maintenance.

Peak discharge of 1.109 Cumecs is proposed to be considered for design of pumps, motors and rising main pipes.

Peak Discharge = 1.109 Cumecs.

Considering 3 No's (2 working +1 standby) of pumps for peak discharge.

Discharge per pump = $1.109 / 2 = 0.555$ Cumecs.

Discharge for working pumps = $0.900 \times 2 = 1.109$ Cumecs which is more than or equal to peak discharge.

Hence it is proposed to provide 3 no's of VT pumps with discharge capacity 1.109 Cumecs (2 working + 1 stand by)

Table 2.1: Details of Pumping Machinery

No	Particulars	Details
		Lifting Water from Gunjanur DC - 01 to Gurmitkal DC - 02
1.	Type of Pump	Vertical Turbine Pumps
2.	Efficiency of Pump	90 %
3.	Intake Level	451.000 m
4.	Delivery Level	643.000 m
5.	Static Head	192.00 m
6.	Losses (Friction + pump internal+ other)	60.00 m

No	Particulars	Details
		Lifting Water from Gunjanur DC - 01 to Gurmitkal DC - 02
7.	Total Pump Head	252.00 m
8.	Peak Discharge	1.109 Cumecs
9.	Number of Pumps	2 working + 1 Standby
10.	Discharge for each Pump	0.555 Cumecs, 1998.00 m ³ / hr
11.	Capacity of each Pump	2366 HP (1765.036 KW)
12.	Total Installed Capacity	7098 HP (5295.108 KW)
13.	Total Power Requirement	10.00 MVA
14.	Electrical Sub-station	110 KV/6.6 KV outdoor type with 2 No. of 10.00 MVA Power transformer (1 Working + 1 Standby) for Lifting water from Gunjanur DC -01
15.	Delivery pipe	600 mm diameter 7 mm thick MS pipes
16.	Manifold system	1100 mm diameter 10 mm thick MS pipes

11.2.3. Power Requirement and electrical substation:

The total power requirement is 10.00 MVA. The power requirement is calculated taking into account of no. of working pumps and auxiliary power supply. The voltage level at which power is required is 6.6 KV and required transformer capacity is to receive 110/6.6 KV power stepping down to 6.6 KV for feeding HT motors. It is proposed to provide transformer capacity of 10.00 MVA power for catering the above loads with OLTC & RTCC panels. Provision for 2 No. of transformer (1 working + 1 standby) of capacity 10.00 MVA in the existing electrical substation. The power supply is considered from existing Gurmitkal Substation Power Line.

It is proposed to construct a 110 KV Terminal bay at existing Gurmitkal substation and to draw the power from this existing 110 KV substation through 110 KV / 6.6 KV SC line on DC Towers. This substation is the nearest substation that required power can be drawn from this substation. The length of power line works out to be 15.00 Km from this substation to proposed lifting point.

11.2.4. Design of Pressure Distribution Network System for filling Tanks

From the jack well cum pump house - 02 pressure distribution is proposed to feed the MI/ZP tanks. Design guidelines as per CPHEEO manual and other relevant IS codes are considered for the design of the pressure distribution system. The details of the pressure distribution network system are as under.

Table 4.1: Details of Pressure Distribution Network System.

No.	Material	Length in m	Pipe Diameter in m	Pipe Class / Pressure Rating
1.	MS	11800	860	MS Pipe
2.	MS	600	800	MS Pipe
3.	MS	3100	680	MS Pipe
4.	DI Pipe	5000	450	Class K - 9
5.	DI Pipe	3900	400	Class K - 9
6.	DI Pipe	5400	315	Class K - 9
7.	DI Pipe	7500	280	Class K - 9
8.	DI Pipe	300	225	Class K - 9
9.	DI Pipe	16740	200	Class K - 9
Total Length		54340		

11.2.5. Delivery Chamber - 02

Rectangular RCC Delivery chamber - 02 is proposed at end of Pressure Distribution Network. The design of delivery chamber - 02 is designed for retention period of 90.00 seconds. The details of the proposed Delivery chamber are as under:

Table 5.1: Details of Delivery Chamber - 02

No	Particulars	Details Lifting Water from Gunjanur DC - 01 to Gurmitkal DC - 02
1.	Ground level at Delivery chamber - 02	RL 642.500 m
2.	Capacity of sump with 1.50 minutes retention period	60.93 Cum
3.	Depth of water	1.70 m
4.	Size	6.0 m x 6.0 m
5.	Water cushion	0.50 m
6.	Free Board	0.80 m
7.	Overall all depth	3.0 m

No	Particulars	Details
		Lifting Water from Gunjanur DC - 01 to Gurmitkal DC - 02
8.	Delivery level	RL 643.000 m

11.2.6. Design of Gravity Distribution Network for Filling of MI Tanks

From the Delivery Chamber - 02 and network of gravity distribution is proposed to feed the MI/ZP Tanks. Design guidelines as per CPHEEO manual and other relevant IS codes are considered for the design of the gravity distribution system. The details of the gravity distribution network system are as under.

Table 6.1: Details of Gravity Distribution Network

No.	Material	Length in m	Pipe Diameter in m	Pipe Class / Pressure Rating
1.	MS	400	910.00	MS Pipe
2.	MS	7600	800.00	MS Pipe
3.	DI pipe	800	355	Class K- 7
4.	DI pipe	5900	250	Class K- 7
5.	DI pipe	2900	200	Class K- 7
6.	DI pipe	9140	180	Class K- 7
Total Length		26740		

Considering the above design parameters, gravity pipe distribution network has been designed. It is proposed to provide a network of MS/DI PIPE pipelines taking the topography of the site into account.

11.2.7. Land Acquisition for Implementation of Scheme

The proposed intake channel, jack well cum pump house, substation and pipeline are planned generally runs in cultivated land. The whole scheme is in revenue land and no forest acquisition is envisaged. Hence a rate of Rs.14.82 lakhs per Ha is considered for dry land and a rate of Rs.29.64 lakhs per Ha is considered for wet land as per the standard norms.

Details of Land Acquisition for implementation of the Scheme:

Extent of land to be acquired = 18.70 Ha (46.21 Acres)

11.3. Cost Estimation

An estimate for Rs.440.00 Crores is prepared for various works envisaged in the project with the following provisions. The cost estimates are based on schedule of rates of WRD, Karnataka for the year 2017 – 18 by adopting issue Rates of cement & steel for the 3rd quarter. The items for which rates are not available in the Schedule of rates, other schedule of rates such as SOR of KUWS & DB for the year 2015-16 SR and PWD & IWDT for the year 2016-17 SR, North East Zone, Kalaburagi circle have been referred. For items where market rates are considered, such rates are obtained from various vendors to arrive at a reasonably correct cost: An abstract giving the details of various items considered for arriving at the total project cost is indicated here as under.

Table 2: General Abstract

No.	Description of Work	Estimated Cost in Lakhs Rupees (at WRD SR 2016-17 continued for 2017-18)	Remarks
SECTION -1: Estimates for work portion (For inviting lump sum Turn-key tender)			
Stage - 01: Lifting Water from Yadgir Barrage to Gunjanur DC - 01			
Part A - Electromechanical Works			
1.1	Design supply, installation and commissioning of pumping machinery and pump house electrical works 4 No's (3 working + 1 standby) VT Pumps of required capacity of 2588 HP.	1927.04	Annexure - 5
1.2	Construction of 110 KV Electrical sub station near proposed Jackwell cum pump house with 2 No's (1 working + 1 standby) 13.50 MVA capacity Power Transformer including construction of Terminal Bay, Erection of 110 KV SC Line on DC towers from the existing substation near Yadgir to the proposed Electrical sub station near Jackwell cum pump house.	1303.80	Annexure - 6
Total, Part-A		3230.84	
Part B - Civil Works			
1.3	Construction of Intake Canal including forebay for a length of 200.0 m.	75.00	
1.4	Construction of Jack well cum pump house for housing 3 working + 1 stand by pumps, including fore bay, miscellaneous works such as watchman quarters, stores and office room, Fencing etc.	593.70	Annexure - 4
1.5	Supplying, Laying, Testing and commissioning of Pressure Distribution Network System for a length of 49.60 Km for filling tanks.	15499.60	Annexure - 7
1.6	Construction of Delivery Chamber - 01 at the end of Pressure Distribution System.	55.01	Annexure - 8

No.	Description of Work	Estimated Cost in Lakhs Rupees (at WRD SR 2016-17 continued for 2017-18)	Remarks
1.7	Jungle clearance in the Tanks and Nalas for stage - 01 @ 5 Lakhs per Tank.	110.00	LS
	Total, Part-B	16333.31	
Part C - Gravity Distribution Network System			
1.8	Supplying, Laying, Testing and commissioning of Gravity Distribution Network System for a length of 96.85 Km for filling tanks.	12818.10	Annexure - 9
	Total, Part-C	12818.10	
	Total cost of construction, (Part- A+B+C)	32382.25	
Part D - Maintenance			
1.9	Operation and Maintenance of the Scheme for 5 years per annum (stage - 01).	168.88	Annexure - 10
	Total, Part-D	168.88	
	Total cost of construction for stage - 01, (Part- A+B+C+D)	32551.13	
Stage - 02: Lifting Water from Gunjanur DC - 01 to Gurmitkal DC - 02			
Part E - Electromechanical Works			
1.10	Design supply, installation and commissioning of pumping machinery and pump house electrical works 3 No's (2 working + 1 standby) VT Pumps of required capacity of 2366 HP.	1291.50	Annexure - 13
1.11	Construction of 110 KV Electrical sub station near proposed Pump house with 2 No's (1working + 1 standby) 10.0 MVA capacity Transformer including construction of Terminal Bay and Erection of 110 KV SC Line on DC towers from existing substation near Gurmitkal to the proposed Electrical sub station near Pump house.	1468.60	Annexure - 14
	Total, Part-E	2760.10	
Part F - Civil Works			
1.12	Construction of Jack well cum pump house for housing 2 working + 1 stand by pumps, including fore bay, miscellaneous works such as watchman quarters, stores, Fencing etc.	259.10	Annexure - 12
1.13	Supplying, Laying, Testing and commissioning of Pressure Distribution Network System for a length of 54.34 Km for filling tanks.	6029.10	Annexure - 15
1.14	Construction of Delivery Chamber - 02 at the end of Pressure Distribution System.	17.18	Annexure - 16

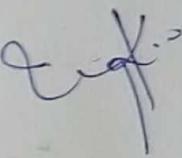
No.	Description of Work	Estimated Cost in Lakhs Rupees (at WRD SR 2016-17 continued for 2017-18)	Remarks
1.15	Jungle clearance in the Tanks and Nalas for stage - 02 @ 5 Lakhs per Tank.	65.00	LS
	Total, Part-F	6370.38	
Part G - Gravity Distribution Network System			
1.16	Supplying, Laying, Testing and commissioning of Gravity Distribution Network System for a length of 26.74 Km for filling tanks.	1646.90	Annexure - 17
	Total, Part-G	1646.90	
	Total cost of construction, (Part- E+F+G)	10777.38	
Part H - Maintenance			
1.17	Operation and Maintenance of the Scheme for 5 years per annum (stage - 02).	123.97	Annexure - 18
	Total, Part-H	123.97	
	Total cost of construction for stage - 02, (Part- E+F+G+H)	10901.35	
	Total cost of construction for Stage - 01 + stage - 02	43452.48	
	Total Amount for work portion (for calling lump sum Turn-key tender) (Section 01 + Section 02) =	43452.48	
SECTION - 2, Statutory Deposits			
2.1	Cost of Land acquisition for implementation of lift head works and distribution system.	332.56	Annexure - 19
2.2	KPTCL deposits.	100.00	
	Total, Section-3	432.56	
3	Add 0.25 % contingency for work portion excluding preliminaries, maintenance and spares	108.63 Lakhs	
	Grand Total =	43993.67 Lakhs	
4	Add for Miscellaneous and rounding off	6.33 Lakhs	
	Total =	44000.00 Lakhs	
		440.00 Crores	
Rupees Four Hundred Forty Crore(s) Only			

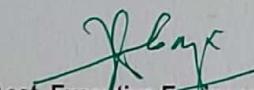
Summary and Conclusion

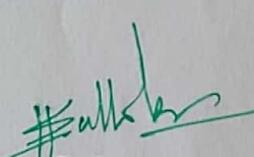
The requirement of **942.78 MCFT (0.943 TMC)** of water annually is very much essential to fill 35 tanks in Yadgir Taluk of Yadgir District. The present water requirement can be met by lifting of water from Bhima River at Yadgir Barrage. It is proposed to lift **2.70 Cumecs (for 150 days with 18 Hrs pumping)**. Providing sustainable and dependable water supply to these drought affected areas is utmost priority for economic growth of Yadgir Taluk in Yadgir district.

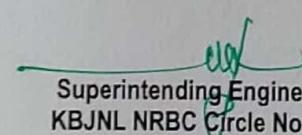
The cost of implementation of the project works out to **Rs. 440.00 Crores** which is techno-economically feasible and needful for the people and their lively hood.

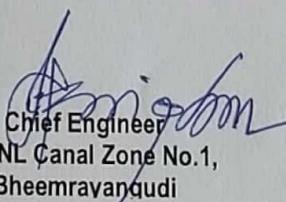
Hence it is requested to place before the ensuing ERC meeting for its deliberation and approval.


Consultant
E I Technologies Pvt Ltd
Bangalore


Asst. Executive Engineer
KBJNL, NRBC Sub-Division No-16
Doranahalli


Executive Engineer
KBJNL Sonathi L.I. Division
Khanapur


Superintending Engineer
KBJNL NRBC Circle No-2,
Krishnapur


Chief Engineer
KBJNL Canal Zone No.1,
Bheemravayangudi

KRISHNA BHAGYA JALA NIGAM LIMITED

**FILLING UP OF 35 TANKS OF YADGIR TALUKA OF YADGIR DISTRICT
FROM BHIMA RIVER**

APPENDIX-1

APPROVAL LETTER



ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಸದವಳಿಗಳು

ವಿಷಯ:- ಭೀಮಾ ನದಿಯ ಯಾದಗಿರಿ ಬ್ಯಾರೇಜ್‌ನ ಹಿನ್ನೀರಿನಿಂದ ನೀರನ್ನು ಲಿಫ್ಟ್ ಮುಖಾಂತರ ಯಾದಗಿರಿ ತಾಲ್ಲೂಕಿನಡಿಯ 35 ಸಣ್ಣ ನೀರಾವರಿ ಹಾಗೂ ಜಿಲ್ಲಾ ಪಂಚಾಯತ್ ಕರೆಗಳನ್ನು ತುಂಬುವ ಯೋಜನೆಗೆ ಅವಶ್ಯವಿರುವ 0.806 ಟಿಎಂಸಿ ನೀರನ್ನು ಹೊಸ ಸೂಂತಿ ಏತ ನೀರಾವರಿ ಯೋಜನೆಯಡಿ ಸಣ್ಣ ನೀರಾವರಿ ಕರೆಗಳ ನೀರಿನ ಹಂಚಿಕೆಯಲ್ಲಿ ಪರಿಗಣಿಸಿ ರೂ.440.00ಕೋಟಿ ಅಂದಾಜು ಮೊತ್ತದ ವಿವರವಾದ ಯೋಜನಾ ವರದಿಗೆ ಆಡಳಿತಾತ್ಮಕ ಅನುಮೋದನೆ ನೀಡುವ ಬಗ್ಗೆ.

ಬುದಲಾಗಿದೆ:- ಪತ್ರ ಸಂಖ್ಯೆ:ವ್ಯಾನಿ/ಕೃಭಾಜನಿ/35 ಕರೆ ತುಂಬುವ ಯೋಜನೆ/ತಾಂತ್ರಿಕ/2017-18/1303
ದಿನಾಂಕ:10/07/2017.

ಪ್ರಸ್ತಾವನೆ:

ವ್ಯವಸ್ಥಾಪಕ ನಿರ್ದೇಶಕರು, ಕೃಷ್ಣಾ ಭಾಗ್ಯ ಜಲ ನಿಗಮ ನಿಯಮತ ರವರು ಮೇಲೆ ಬುದಲಾದ ಪತ್ರದಲ್ಲಿ ಭೀಮಾ ನದಿಯ ಯಾದಗಿರಿ ಬ್ಯಾರೇಜ್‌ನ ಹಿನ್ನೀರಿನಿಂದ ನೀರನ್ನು ಲಿಫ್ಟ್ ಮುಖಾಂತರ ಯಾದಗಿರಿ ತಾಲ್ಲೂಕಿನಡಿಯ 35 ಸಣ್ಣ ನೀರಾವರಿ ಹಾಗೂ ಜಿಲ್ಲಾ ಪಂಚಾಯತ್ ಕರೆಗಳನ್ನು ತುಂಬುವ ಯೋಜನೆಗೆ ಅವಶ್ಯವಿರುವ 0.806 ಟಿಎಂಸಿ ನೀರನ್ನು ಸಣ್ಣ ನೀರಾವರಿ ಕರೆಗಳ ನೀರಿನ ಹಂಚಿಕೆಯಡಿ ಪರಿಗಣಿಸಿ ರೂ.440.00ಕೋಟಿ ಅಂದಾಜು (2016-17ನೇ ಸಾಲಿನ ಜಲಸಂಪನ್ಮೂಲ ಇಲಾಖೆ, 2015-16ನೇ ಸಾಲಿನ KUWS & DB ಮತ್ತು PWP& IWDT ಕಲಬುರಗಿ ವ್ಯಾಪಕ ದರಪಟ್ಟಿಯ ದರಗಳಂತೆ) ಮೊತ್ತದ ವಿವರವಾದ ಯೋಜನಾ ವರದಿಗೆ ಆಡಳಿತಾತ್ಮಕ ಅನುಮೋದನೆ ಕೋರಿ ಪ್ರಸ್ತಾವನೆ ಸಲ್ಲಿಸಿರುತ್ತಾರೆ.

ಪ್ರಸ್ತಾವನೆಯನ್ನು ದಿನಾಂಕ:08/05/2017 ರಂದು ಜರುಗಿದ ನಿಗಮದ 31ನೇ ಅಂದಾಜು ಪರಿಶೀಲನಾ ಸಮಿತಿಯ ಮುಂದೆ ಯಾದಗಿರಿ ತಾಲ್ಲೂಕಿನಡಿಯ 35 ಸಣ್ಣ ನೀರಾವರಿ ಹಾಗೂ ಜಿಲ್ಲಾ ಪಂಚಾಯತ್ ಕರೆಗಳನ್ನು ತುಂಬುವ ಯೋಜನೆಯ ಪ್ರಸ್ತಾವನೆಯನ್ನು ಪ್ರಂಡಿಸಲಾಗಿದ್ದು, ಸಮಿತಿಯು ಸರ್ಕಾರದಿಂದ ಆಡಳಿತಾತ್ಮಕ ಅನುಮೋದನೆ ಹಾಗೂ ಯೋಜನೆಗೆ ಅವಶ್ಯವಿರುವ 0.806 ಟಿ.ಎಂ.ಸಿ. ನೀರನ್ನು ಸಣ್ಣ ನೀರಾವರಿ/ಜಿಲ್ಲಾ ಪಂಚಾಯತ್ ಕರೆಗಳ ನೀರಿನ ಹಂಚಿಕೆಯಡಿ ಪರಿಗಣಿಸಿ ನಿಗಮದ ನಿರ್ದೇಶಕರ ಮಂಡಳಿಯ ಮುಂದೆ ಮಂಡಿಸಲು ಶಿಫಾರಸ್ಸು ಮಾಡಿರುವುದಾಗಿ ವರದಿ ಮಾಡಿರುತ್ತಾರೆ.

ನಿಗಮದ ಅಂದಾಜು ಪರಿಶೀಲನಾ ಸಮಿತಿಯ ಶಿಫಾರಸ್ಸಿನಿಷ್ಟು ಸದರಿ ಯೋಜನೆಯ ಪ್ರಸ್ತಾವನೆಯನ್ನು ದಿನಾಂಕ:10.05.2017 ರಂದು ಜರುಗಿದ ನಿಗಮದ 11ನೇ ನಿಗಮದ ನಿರ್ದೇಶಕರ ಮಂಡಳಿಯ ಸಭೆಯ ಮುಂದೆ ಮಂಡಿಸಲಾಗಿದ್ದು, ನಿರ್ದೇಶಕರ ಮಂಡಳಿಯ ಅಂದಾಜು ಪರಿಶೀಲನಾ ಸಮಿತಿಯ ಶಿಫಾರಸ್ಸಿನಿಷ್ಟು ಭೀಮಾ ನದಿಯ ಯಾದಗಿರಿ ಬ್ಯಾರೇಜ್ ಹಿನ್ನೀರಿನಿಂದ ನೀರನ್ನು ಲಿಫ್ಟ್ ಮುಖಾಂತರ ಯಾದಗಿರಿ ತಾಲ್ಲೂಕಿನಡಿಯ 35 ಸಣ್ಣ ನೀರಾವರಿ ಹಾಗೂ ಜಿಲ್ಲಾ ಪಂಚಾಯತ್ ಕರೆಗಳನ್ನು ತುಂಬಿಸುವ ಯೋಜನೆ ಅನುಷ್ಠಾನಕ್ಕೆ ಅವಶ್ಯವಿರುವ 0.806ಟಿಎಂಸಿ ನೀರನ್ನು ಸಣ್ಣ ನೀರಾವರಿ ಕರೆಗಳ ನೀರಿನ ಹಂಚಿಕೆಯಡಿ ಪರಿಗಣಿಸುವ ಕೋರಿಕೆಯಂದಿಗೆ ಹಾಗೂ ರೂ.440.00 ಕೋಟಿ ಅಂದಾಜು ಮೊತ್ತದ ಶಿಫಾರಸ್ಸಿನಿಷ್ಟು ಸರ್ಕಾರದ ಆಡಳಿತಾತ್ಮಕ ಅನುಮೋದನೆಗಾಗಿ ಸಲ್ಲಿಸಲು ಮಂಡಳಿ ಸಭೆಯು ಶಿಫಾರಸ್ಸಿನಿಷ್ಟು ಮಾಡಿರುವುದಾಗಿ ವರದಿ ಮಾಡಲಾಗಿದೆ.

ಅದರಂತೆ, ವ್ಯವಸ್ಥಾಪಕ ನಿರ್ದೇಶಕರು, ಕೃಷ್ಣಾ ಭಾಗ್ಯ ಜಲ ನಿಗಮ ನಿಯಮತ ರವರು, ಸದರಿ ಯೋಜನೆಯನ್ನು ಸರ್ಕಾರವು ಅನುಷ್ಠಾನಗೊಳಿಸಲಾಗುವುದೆಂದು 2017-18 ನೇ ಸಾಲಿನ ಆಯವ್ಯಯ ಭಾಷಣದಲ್ಲಿ ಫೋಂಟಿಸಿರುವ ಹಿನ್ನೆಲೆಯಲ್ಲಿ, 2016-17ನೇ ಸಾಲಿನ ಜಲ ಸಂಪನ್ಮೂಲ ಇಲಾಖೆಯ ದರಪಟ್ಟಿಯಗಳನ್ನಿಷ್ಟು ರೂ.440.00ಕೋಟಿ ಅಂದಾಜು ಮೊತ್ತದ ಹೊಸ ಯೋಜನೆ ಅನುಷ್ಠಾನಕ್ಕೆ ಆಡಳಿತಾತ್ಮಕ ಅನುಮೋದನೆ ಕೋರಿ ವ್ಯವಸ್ಥಾಪಕ ನಿರ್ದೇಶಕರು, ಕೃಷ್ಣಾ ಭಾಗ್ಯ ಜಲ ನಿಗಮ ನಿಯಮತರವರು ಪ್ರಸ್ತಾವನೆ ಸಲ್ಲಿಸಿರುತ್ತಾರೆ.

ಪ್ರಸ್ತಾವನೆಯಲ್ಲಿನ ಅಂತರ್ಗತನ್ನು ಕೂಲಂಕೆವಾಗಿ ಪರಿಶೀಲಿಸಿ, ಈ ಕೆಳಗಿನಂತೆ ಆದೇಶ ಹೂರಡಿಸಿದೆ.

ಸರ್ಕಾರಿ ಆದೇಶ ಸಂಖ್ಯೆ: ಜಾಂಜಿ 135 ಬೆಬ್ಬನ್ ದಿನಾಂಕ: 08/11/2017

ಭೀಮಾ ನದಿಯ ಯಾದಗಿರಿ ಬ್ಯಾರೇಜ್‌ನ ಹಿನ್ನೀರಿನಿಂದ ನೀರನ್ನು ಲಿಫ್ಟ್ ಮುಖಾಂತರ ಯಾದಗಿರಿ ತಾಲ್ಲೂಕಿನಡಿಯ 35 ಸಣ್ಣ ನೀರಾವರಿ ಹಾಗೂ ಜಿಲ್ಲೆ ಪಂಚಾಯತ್ ಕರೆಗಳನ್ನು ತುಂಬುವ ಯೋಜನೆಗೆ ಅವಶ್ಯವಿರುವ 0.806 ಟಿಎಂಸಿ ನೀರನ್ನು ಹೊಸ ಸೂಂತಿ ಏತ ನೀರಾವರಿ ಯೋಜನೆಯಡಿ ಸಣ್ಣ ನೀರಾವರಿ ಕರೆಗಳ ನೀರನ ಹಂಚಿಕೆಯಾಗಿರುವ ಪ್ರಮಾಣದಲ್ಲಿ ಪರಿಗಣಿಸಿ ರೂ.440.00ಕೋಟಿ ಅಂದಾಜು ಮೊತ್ತದ ವಿವರವಾದ ಯೋಜನಾ ವರದಿಗೆ ಆಡಳಿತಾತ್ಮಕ ಅನುಮೋದನೆ ನೀಡಿದೆ.

ಈ ಆದೇಶವನ್ನು ಅಧಿಕ ಇಲಾಖೆಯ ಟಿಪ್ಪಣಿ ಸಂಖ್ಯೆ: 428 ಆಕ್ಷೇ-1/2017, ದಿನಾಂಕ: 12.10.2017ರಲ್ಲಿ, ಹಾಗೂ ಯೋಜನಾ ಇಲಾಖೆಯ ಟಿಪ್ಪಣಿ ಸಂಖ್ಯೆ: 41 ಎಂಬೆಂದು 2017, ದಿನಾಂಕ: 19.07.2017ರಲ್ಲಿ ನೀಡಿರುವ ಸಹಮತಿಯಂತೆ ಹೂರಡಿಸಲಾಗಿದೆ.

ಕನಾರಾಟಕ ರಾಜ್ಯಪಾಲುರ ಆಜ್ಞಾನುಸಾರ
ಮತ್ತು ಅವರ ಹೆಸರಿನಲ್ಲಿ
೦೫/೧೧/೧೭

(ಬಿ. ಹರಿನಾರಾಯಣ)

ಸರ್ಕಾರಿರದ ಅಧೀಕ್ಷ ಕಾರ್ಯದರ್ಶಿ (ಕೃಭಾಜನಿ)
ಜಲ ಸಂಪನ್ಮೂಲ ಇಲಾಖೆ.

ಸ್ತುತಿಯನ್ನು:

1. ಮಹಾಲೇಖಿಪಾಲರು (ಲೆಕ್ಕಪತ್ರ ಮತ್ತು ಅಡಿಕ್), ಕನಾರಾಟಕ, ಬೆಂಗಳೂರು.
2. ಸರ್ಕಾರಿರದ ಪ್ರಧಾನ ಕಾರ್ಯದರ್ಶಿಗಳು, ಗ್ರಾಮೀಣಾಭಿವೃದ್ಧಿ ಮತ್ತು ಪಂಚಾಯತ್ರಾರಾಜ್ ಇಲಾಖೆ, ಬಹುಮಹಡಿಗಳ ಕಟ್ಟಡ, ಬೆಂಗಳೂರು.
3. ಸರ್ಕಾರಿರದ ಕಾರ್ಯದರ್ಶಿಗಳು, ಸಣ್ಣ ನೀರಾವರಿ ಇಲಾಖೆ, ವಿಕಾಸ ಸೌಧ, ಬೆಂಗಳೂರು..
4. ವ್ಯವಸ್ಥಾಪಕ ನಿರ್ದೇಶಕರು, ಕೃಷ್ಣಾ ಭಾಗ್ಯ ಜಲ ನಿಗಮ ನಿಯಮಿತ, ಬೆಂಗಳೂರು.
5. ಸರ್ಕಾರಿರದ ಪ್ರಧಾನ ಕಾರ್ಯದರ್ಶಿಗಳು, ಜಲ ಸಂಪನ್ಮೂಲ ಇಲಾಖೆ ಇವರ ಆವೃತ್ತಿ ಕಾರ್ಯದರ್ಶಿಗಳು.
6. ಸರ್ಕಾರಿರದ ಕಾರ್ಯದರ್ಶಿಗಳು, ಜಲ ಸಂಪನ್ಮೂಲ ಇಲಾಖೆ ಇವರ ಆವೃತ್ತಿ ಕಾರ್ಯದರ್ಶಿಗಳು.
7. ಮಾನ್ಯ ಜಲ ಸಂಪನ್ಮೂಲ ಸಚಿವರ ಆವೃತ್ತಿ ಕಾರ್ಯದರ್ಶಿಗಳು, ವಿಧಾನ ಸೌಧ, ಬೆಂಗಳೂರು.
8. ಸರ್ಕಾರಿರದ ಮುಖ್ಯ ಕಾರ್ಯದರ್ಶಿಯಿಂದ ಆವೃತ್ತಿ ಕಾರ್ಯದರ್ಶಿಗಳು (ಸಚಿವ ಸಂಪುಟ) ವಿಧಾನ ಸೌಧ, (ಉಲ್ಲೇಖ: ಪ್ರಕರಣ ಸಂಖ್ಯೆ: 700/2017 ರಂತೆ)
9. ನಿರ್ದೇಶಕರು, ಸಂಪೂರ್ಣ ಯೋಜನಾ ವಿಭಾಗ, ಯೋಜನೆ, ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜನೆ ಮತ್ತು ಸಾಂಖ್ಯಿಕ ಇಲಾಖೆ, ಬಹುಮಹಡಿಗಳ ಕಟ್ಟಡ, ಬೆಂಗಳೂರು.
10. ಸರ್ಕಾರಿರದ ಉಪ ಕಾರ್ಯದರ್ಶಿಗಳು (ಕೃಭಾಜನಿ/ಎರಡಂಬ) ಜಲ ಸಂಪನ್ಮೂಲ ಇಲಾಖೆ.
11. ಸರ್ಕಾರಿರದ ಅಧೀಕ್ಷ ಕಾರ್ಯದರ್ಶಿ, ಅಧಿಕ ಇಲಾಖೆ (ಲೋಳ-ಆಕ್ಷೇ-1), ವಿಧಾನ ಸೌಧ, ಬೆಂಗಳೂರು.
12. ಶಾಖಾ ರಕ್ಷಕ ಕಡತ/ಹೆಚ್ಚಿನ ಪ್ರತಿಗಳು.

KRISHNA BHAGYA JALA NIGAM LIMITED

**FILLING UP OF 35 TANKS OF YADGIR TALUKA OF YADGIR DISTRICT
FROM BHIMA RIVER**

ANNEXURE - 1

GENERAL ABSTRACT

Annexure - 1

KRISHNA BHAGYA JALA NIGAM LIMITED
FILLING UP OF 35 TANKS OF YADGIR TALUKA OF YADGIR DISTRICT FROM BHIMA RIVER
GENERAL ABSTRACT

No.	Description of Work	Estimated Cost in Lakhs Rupees (at WRD SR 2016-17 continued for 2017-18)	Remarks
SECTION -1: Estimates for work portion (For inviting lump sum Turn-key tender)			
Stage - 01: Lifting Water from Yadgir Barrage to Gunjanur DC - 01			
Part A - Electromechanical Works			
1.1	Design supply, installation and commissioning of pumping machinery and pump house electrical works 4 No's (3 working + 1 standby) VT Pumps of required capacity of 2588 HP.	1927.04	Annexure - 5
1.2	Construction of 110 KV Electrical sub station near proposed Jackwell cum pump house with 2 No's (1working + 1 standby) 13.50 MVA capacity Power Transformer including construction of Terminal Bay, Erection of 110 KV SC Line on DC towers from the existing substation near Yadgir to the proposed Electrical sub station near Jackwell cum pump	1303.80	Annexure - 6
Total, Part-A		3230.84	
Part B - Civil Works			
1.3	Construction of Intake Canal including forebay for a length of 200.0 m.	75.00	
1.4	Construction of Jack well cum pump house for housing 3 working + 1 stand by pumps, including fore bay, miscellaneous works such as watchman quarters, stores and office room, Fencing etc.	593.70	Annexure - 4
1.5	Supplying, Laying, Testing and commissioning of Pressure Distribution Network System for a length of 49.60 Km for filling tanks.	15499.60	Annexure - 7
1.6	Construction of Delivery Chamber - 01 at the end of Pressure Distribution System.	55.01	Annexure - 8
1.7	Jungle clearance in the Tanks and Nalas for stage - 01 @ 5 Lakhs per Tank.	110.00	LS
Total, Part-B		16333.31	
Part C - Gravity Distribution Network System			
1.8	Supplying, Laying, Testing and commissioning of Gravity Distribution Network System for a length of 96.85 Km for filling tanks.	12818.10	Annexure - 9
Total, Part-C		12818.10	
Total cost of construction, (Part- A+B+C)		32382.25	

No.	Description of Work	Estimated Cost in Lakhs Rupees (at WRD SR 2016-17 continued for 2017-18)	Remarks
Part D - Maintenance			
1.9	Operation and Maintenance of the Scheme for 5 years per annum (stage - 01).	168.88	Annexure - 10
	Total, Part-D	168.88	
	Total cost of construction for stage - 01, (Part- A+B+C+D)	32551.13	
Stage - 02: Lifting Water from Gunjanur DC - 01 to Gurmitkal DC - 02			
Part E - Electromechanical Works			
1.10	Design supply, installation and commissioning of pumping machinery and pump house electrical works 3 No's (2 working + 1 standby) VT Pumps of required capacity of 2366 HP.	1291.50	Annexure - 13
1.11	Construction of 110 KV Electrical sub station near proposed Pump house with 2 No's (1working + 1 standby) 10.0 MVA capacity Transformer including construction of Terminal Bay and Erection of 110 KV SC Line on DC towers from existing substation near Gurmitkal to the proposed Electrical sub station near Pump house.	1468.60	Annexure - 14
	Total, Part-E	2760.10	
Part F - Civil Works			
1.12	Construction of Jack well cum pump house for housing 2 working + 1 stand by pumps, including fore bay, miscellaneous works such as watchman quarters, stores, Fencing etc.	259.10	Annexure - 12
1.13	Supplying, Laying, Testing and commissioning of Pressure Distribution Network System for a length of 54.34 Km for filling tanks.	6029.10	Annexure - 15
1.14	Construction of Delivery Chamber - 02 at the end of Pressure Distribution System.	17.18	Annexure - 16
1.15	Jungle clearance in the Tanks and Nalas for stage - 02 @ 5 Lakhs per Tank.	65.00	LS
	Total, Part-F	6370.38	
Part G - Gravity Distribution Network System			
1.16	Supplying, Laying, Testing and commissioning of Gravity Distribution Network System for a length of 26.74 Km for filling tanks.	1646.90	Annexure - 17
	Total, Part-G	1646.90	
	Total cost of construction, (Part- E+F+G)	10777.38	

No.	Description of Work	Estimated Cost in Lakhs Rupees (at WRD SR 2016-17 continued for 2017-18)	Remarks
Part H - Maintenance			
1.17	Operation and Maintenance of the Scheme for 5 years per annum (stage - 02).	123.97	Annexure - 18
	Total, Part-H	123.97	
	Total cost of construction for stage - 02, (Part- E+F+G+H)	10901.35	
	Total cost of construction for Stage - 01 + stage - 02	43452.48	
	Total Amount for work portion (for calling lump sum Turn-key tender) (Section 01 + Section 02) =	43452.48	
SECTION - 2, Statutory Deposits			
2.1	Cost of Land acquisition for implementation of lift head works and distribution system.	332.56	Annexure - 19
2.2	KPTCL deposits.	100.00	
	Total, Section-3	432.56	
3	Add 0.25 % contingency for work portion excluding preliminaries, maintenance and spares	108.63 Lakhs	
	Grand Total =	43993.67 Lakhs	
4	Add for Miscellaneous and rounding off	6.33 Lakhs	
	Total =	44000.00 Lakhs	
		440.00 Crores	

Rupees Four Hundred Forty Crore(s) Only

Consultant
E I Technologies Pvt Ltd
Bangalore

Asst. Executive Engineer
KBJNL, NRBC Sub-Division No-16
Doranahalli

Executive Engineer
KBJNL Sonathi L.I. Division
Khanapur

Superintending Engineer
KBJNL NRBC Circle No-2,
Krishnapur

Chief Engineer
KBJNL Canal Zone No.1,
Bheemrayangudi